

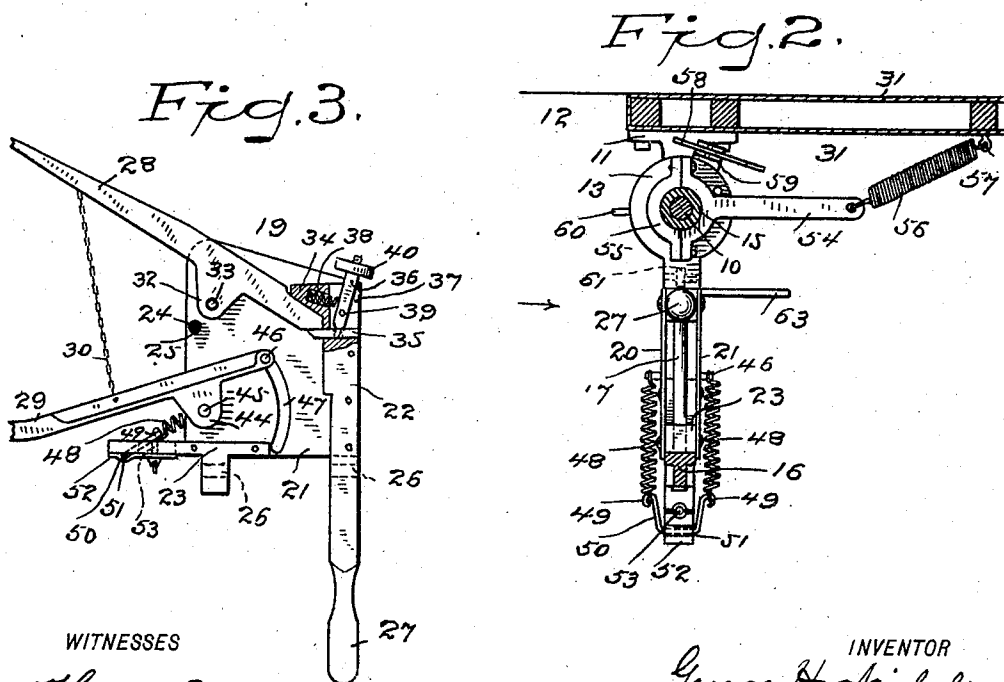
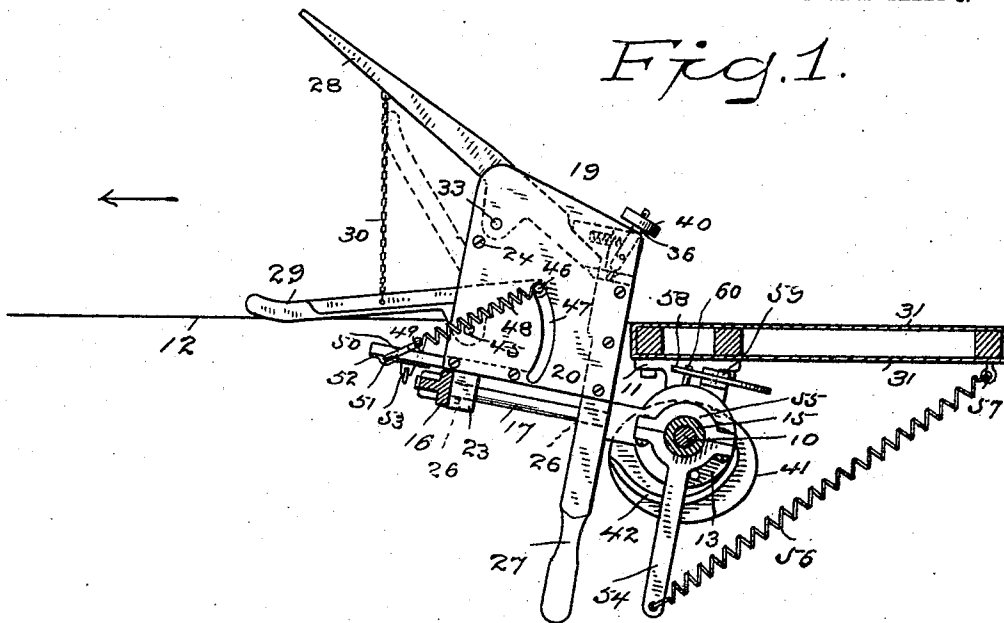
No. 848,196.

PATENTED MAR. 26, 1907.

G. H. NICHOLS,
MAIL BAG CATCHER.

APPLICATION FILED FEB. 18. 1907.

2 SHEETS--SHEET 1.



WITNESSES

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INVENTOR

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Fig. 4.

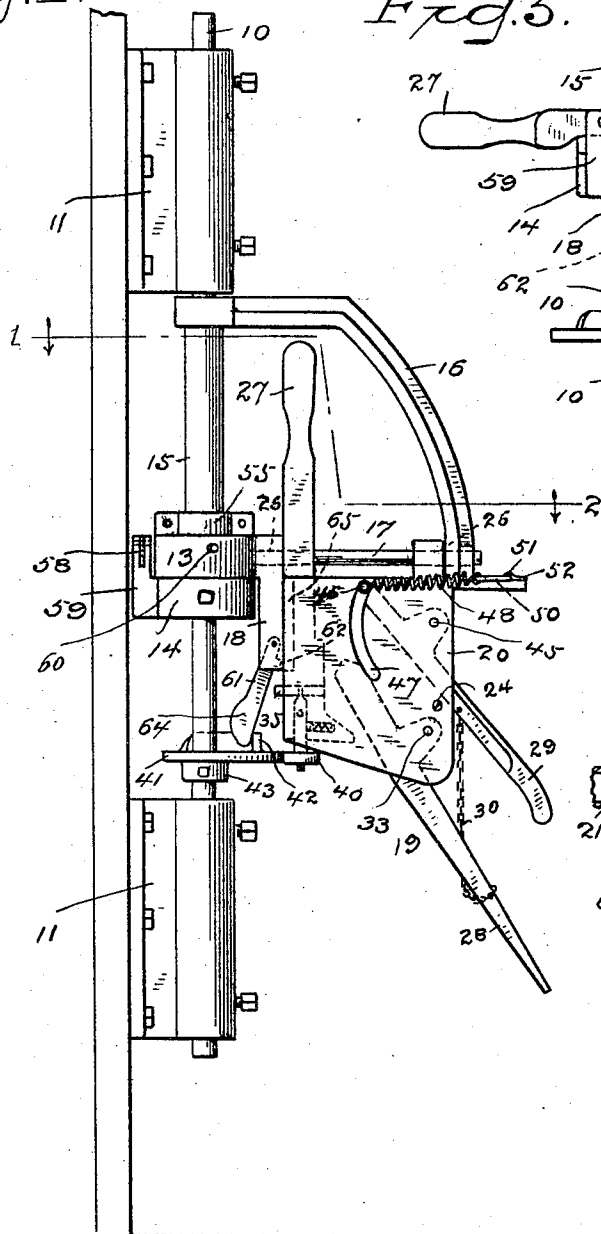


Fig. 5.

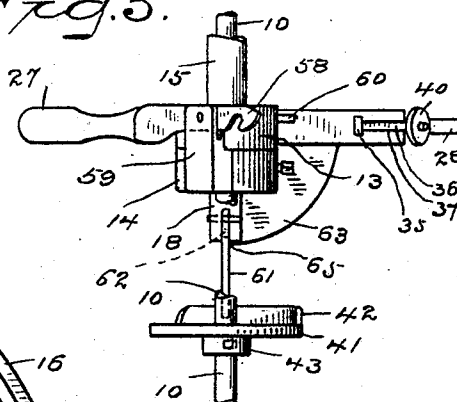
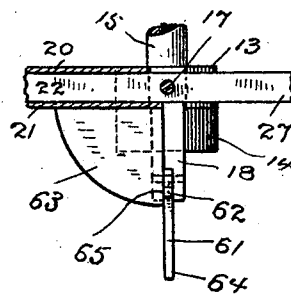


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE H. NICHOLS, OF NORWALK, CONNECTICUT, ASSIGNOR OF ONE-
FOURTH TO WILLIAM T. AINLEY, OF NORWALK, CONNECTICUT.

MAIL-BAG CATCHER.

No. 848,196.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed February 18, 1907. Serial No. 357,822.

To all whom it may concern:

Be it known that I, GEORGE H. NICHOLS, a citizen of the United States, residing at Norwalk, county of Fairfield, State of Connecticut, have invented a new and useful Mail-Bag Catcher, of which the following is a specification.

This invention has for its object to provide a mail-bag catcher adapted to be pivoted upon the inner side of a car near the door-opening, which will require but little room, will grip a suspended mail-bag and hold it securely but without danger of injuring the bag and without danger of dropping it outside, and will automatically release the bag and permit it to drop upon the floor of the car when it is swung inward. With these and other objects in view I have devised the novel mail-bag catcher of which the following description, in connection with the accompanying drawings, is a specification, reference characters being used to indicate the several parts.

Figure 1 is a horizontal section on the line 1 2 in Fig. 4 illustrating my novel mail-bag catcher in the horizontal and also in the engaging position; Fig. 2, a similar view illustrating the catcher in the vertical and also in the releasing position; Fig. 3, a plan view of the catcher detached with the top plate removed; Fig. 4, an elevation showing the catcher in the vertical and also in the releasing position, as in Fig. 2, the point of view being from the direction indicated by the arrow in Fig. 2; Fig. 5, a detail elevation illustrating a mid-position of the catcher as it is swung inward an instant before it is released and permitted to swing to the vertical position, and Fig. 6 a detail elevation from a point of view opposite to that in Fig. 5.

10 denotes a vertical rod which is secured in brackets 11, bolted on the inner side of the wall of a car contiguous to the door-opening, which is indicated by 12. The operative parts are carried by a hub 13, which oscillates upon rod 10 and rests upon a collar 14, rigidly secured to the rod.

15 denotes a sleeve which extends upward from the collar, and 16 an arm which extends outward and downward from the top of the sleeve and supports the outer end of a horizontal rod 17, the inner end of which is rigidly secured in hub 13, or, as in the present instance, in the upper end of a downwardly-

extending arm 18, which is cast integral with or rigidly secured to the hub.

19 denotes the catcher proper as a whole. The special structure of the body of the catcher is not of the essence of the invention. As shown in the drawings, the body of the catcher comprises upper and lower plates (indicated by 20 and 21) which are screwed or bolted to blocks 22 and 23. In order to give an additional support to the upper and lower plates, one of the bolts or screws (specifically indicated by 24) carries a sleeve 25, against the ends of which the upper and lower plates, respectively, rest. Blocks 22 and 23 are provided with holes 26, which receive horizontal rod 17 freely. (See dotted lines, Figs. 1, 3, and 4.) The catcher swings from the horizontal to the vertical position, and vice versa, on this rod, as will be more fully explained. Block 22 has formed integral therewith a handpiece 27 for convenience in manipulation.

The mail-bag to be caught (not shown) is suspended by means of a cord or any suitable fixture and is caught between an engaging lever 28 and a gripping-lever 29, both of which are pivoted between the upper and lower plates of the catcher and are connected by means of a chain or flexible wire cable, if preferred, (indicated by 30.) The ends of this chain are connected to the engaging and gripping levers approximately midway between the pivotal points of said levers and their outer ends. In the engaging position, as in Fig. 1, the chain is stretched taut and lies at approximately a right angle to the side of the car, which is indicated by 31. The engaging lever is provided on the side toward the gripping-lever with a boss or projection 32, and its fulcrum-stud (indicated by 33) passes through this boss. The inner end of the engaging lever rests in the engaging position against an abutment 34 on block 22 and is locked in the engaging position by means of a latch 35, which is recessed in block 22. The latch is operated to release the engaging lever by means of a lever 36, fulcrumed on a stud 39 in a recess 37 in block 22. A spring 38, recessed in abutment 34, bears against the lever on the opposite side of its fulcrum-stud from the latch and acts to retain the latch in the engaging position, as in Fig. 3. The rear face of the latch and the corresponding face of the inner end of the engaging le-

ver are beveled, so that when the engaging lever is swung to the engaging position it will push the latch backward against the power of the spring, after which the spring will cause the latch to move forward and automatically lock the engaging lever in the engaging position. The outer end of lever 36 carries a roller 40, which engages a cam 41, (see Fig. 4 in connection with Fig. 1,) the action of which is to oscillate lever 36 and move the latch backward to release the engaging lever and cause it to automatically release a bag within the car when the catcher is swung to the position shown in Figs. 2 and 4, as will be more fully explained. Cam 41 has formed integral therewith a cam 42, the function of which will presently be explained. These cams are shown as cast integral with a hub 43, which is rigidly secured to rod 10.

The gripping-lever is provided on the opposite side from the engaging lever with a boss or projection 44, and its fulcrum-stud (indicated by 45) passes through this boss. At the inner end of the gripping-lever is a pin 46, the ends of which pass through arc-shaped slots 47 in upper and lower plates 20 and 21, the center of the circle of which the arc forms a part being the fulcrum-stud of the lever.

48 denotes springs on the outer side of plates 20 and 21, one end of each spring being connected to an end of pin 46 and the other ends to eyes 49 upon a U-shaped hanger 50. The mid-length of this hanger engages a socket 51 in a plate 52, which is adjustably secured to block 23 by means of a bolt 53, passing through a slot in the block. By loosening the bolt the plate and hanger may be slid inward or outward to regulate the tension of the springs. As pin 46, to the opposite ends of which the springs are connected, swings in an arc, of which the fulcrum-stud of the gripping-lever is the center, and the other ends of the springs are attached at points back of said fulcrum-stud, it follows that the springs will be contracted when the pin is at either end of the slots and distended as the pin is moved toward the mid-length of the slots, so that the action of the springs will be to retain the gripping-lever at either the receiving position, as in Figs. 1 and 3, when the pin is at one end of the slots, or in the gripping position, as in Figs. 2 and 4, when the pin is at the other end of the slots. In other words, the springs act to draw pin 46 toward the nearest end of the slots, and thus retain the gripping-lever in either position in which it may be placed.

54 denotes an arm which is rigidly secured to sleeve 15 by means of a clip 55 or in any suitable manner, and 56 a relatively strong spring, one end of which is connected to the outer end of the arm and the other end to the side of the car, as at 57, and which acts to draw the catcher within the car as soon as the

catcher is released. The catcher is locked in the receiving position by means of a balanced hook-ended latch 58, pivoted in a bracket 59, which projects from collar 14. This latch is engaged by a pin 60, extending from hub 13 and lifted when the catcher is swung to the receiving position, and then the hooked end drops back of the pin and automatically locks the catcher in position to engage a mail-bag suspended outside the car. When the catcher is swung from its vertical position, as in Figs. 2 and 4, to the horizontal position, it is locked there by means of a pendent latch 61, which is pivoted in arm 18, extending from hub 13. This latch is provided with a lug 62, (see Figs. 4 and 6,) which swings into the path of a plate 63, cast integral with or rigidly secured to block 22. This plate lies in front of lug 62 and retains the latch in the inoperative position at all times except when the catcher is swung to the horizontal position. As the catcher is swung to the horizontal position plate 63 swings past the lug and the weighted lower end of the latch (indicated by 64) causes it to swing downward and throws the lug outward into the path of the plate, the lug engaging the rear wall of the plate (indicated by 65, see Fig. 6,) and automatically locking the catcher in the horizontal position. When the catcher is released and is drawn inward by spring 56 or otherwise, the lower end 64 of latch 61 engages cam 42, which is shown as made integral with cam 41 and rigidly secured to rod 10. This cam acts to swing the lower end of the latch inward and draws lug 62 inward out of the path of plate 63, thus automatically releasing the catcher and permitting it to swing downward to the vertical position, as in Figs. 2 and 4.

The operation is as follows: Suppose the catcher to be in its normal or releasing position, as in Figs. 2 and 4. If it is required to catch a mail-bag suspended outside the car while the car is moving, the operator, by means of handpiece 27, swings the catcher to the horizontal position, where it is locked by the engagement of lug 62 on pendent latch 61 with rear wall 65 of plate 63 upon block 22. The operator then swings the catcher horizontally outward to the receiving position, as in Fig. 1, where it is locked by the engagement of latch 58 with pin 60 and then swings the gripping-lever to the receiving position, which, by means of chain 30, draws the engaging lever also to the receiving position, where it is locked by latch 35. The suspended mail-bag passes between engaging lever 28 and gripping-lever 29 and engages chain 30, the first effect of which is to swing the gripping-lever from its receiving position, as in full lines in Fig. 1, to its gripping position, as in dotted lines in said figure, in which position it firmly grips the mail-bag between itself and the engaging lever. When

the mail-bag strikes the chain and the gripping lever is closed upon it, the catcher is swung backward slightly and the shock of the blow tilts hook-ended balanced latch 58, causing it to release pin 60, which permits the relatively strong spring 56 to swing the catcher and mail-bag within the car. Pendant latch 61 now engages cam 42, which swings the lower end of said latch inward, as in Fig. 4, and draws lug 62 out of engagement with rear wall 65 of plate 63 and permits the catcher to drop by gravity to its horizontal position, as in Figs. 2 and 4. An instant later roller 40 on lever 36 engages cam 41, tilts said lever against the power of spring 38, and withdraws latch 35 from its engagement with the inner end of engaging lever 28, permitting said lever to drop downward, as in Fig. 4, and permitting the mail-bag to drop out from between the engaging lever and the gripping-lever upon the floor of the car. When the device is not in use, clip 55 may be loosened, so that arm 54 will be loose on sleeve 15, and said arm and the catcher may be swung backward close against the inner wall of the car and entirely out of the way. In setting the device for use the catcher is swung outward to a position at an angle to the wall of the car, and arm 54 is locked to the sleeve at approximately a right angle to the catcher, as in Fig. 2. If preferred, arm 54 and spring 56 may be dispensed with and the catcher swung within the car by means of a cord or rope as soon as it grips a mail-bag.

Having thus described my invention, I claim—

1. A device of the character described comprising a horizontally and vertically swinging catcher, means for automatically locking the catcher in the horizontal position and for locking it in the receiving position from which it is released by engagement with a mail-bag, means for automatically releasing the catcher from its horizontal position as it is swung inward and means for automatically releasing a mail-bag that has been caught.

2. A device of the character described comprising a horizontally and vertically swinging catcher, a latch 61 for automatically locking the catcher in the horizontal position, a latch 58 for automatically locking the catcher in the receiving position from which it is released by engagement with a mail-bag, means for automatically actuating latch 61 to permit the catcher to drop to the vertical position as it is swung inward, and means for automatically releasing a mail-bag that has been caught.

3. A device of the character described comprising a horizontally and vertically swinging catcher, a latch 61 for automatically locking the catcher in the horizontal position, a latch 58 for automatically locking the catcher in the receiving position

from which it is released by engagement with a mail-bag, a spring for swinging the catcher inward when released, means for automatically actuating latch 61 to permit the catcher to drop to the vertical position as it is swung inward, and means for automatically releasing a mail-bag that has been caught.

4. A device of the character described comprising a horizontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for locking the catcher in the receiving position, and means for automatically releasing a mail-bag that has been caught.

5. A device of the character described comprising a horizontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for locking the catcher in the receiving position, a spring for drawing the catcher inward, and means for automatically releasing a mail-bag that has been caught.

6. A device of the character described comprising a horizontally and vertically swinging catcher provided with means for gripping a suspended mail-bag, means for normally retaining the catcher within a car, a balanced hook-ended latch for retaining the catcher in the receiving position, means for releasing the catcher from the horizontal position, and means for releasing a mail-bag that has been caught.

7. A device of the character described comprising a horizontally and vertically swinging catcher, means for locking the catcher in the horizontal position and for locking it in the receiving position, means for releasing the catcher so that it will drop to the vertical position, and means for releasing a mail-bag.

8. In a device of the character described the combination with a horizontally and vertically swinging catcher and means for retaining said catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, means for locking the engaging lever in the receiving position and a chain connecting said levers which is taut in the receiving position, said chain acting to draw the gripping-lever to the gripping position when engaged by a mail-bag and the shock releasing the catcher which may then be swung inward.

9. In a device of the character described the combination with a horizontally and vertically swinging catcher having arc slots 47 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, a pin at the inner end of the gripping-lever which engages the arc slots, springs connected to said pin and to the catcher back of the piv-

otal point of said lever, whereby said lever is retained in either the receiving or gripping positions, means for locking the engaging lever in the receiving position and a chain
5 connecting said levers which is taut in the receiving position, said chain acting to draw the gripping-lever to the gripping position when engaged by a mail-bag and the shock releasing the catcher which may then be
10 swung inward.

10. In a device of the character described the combination with a horizontally and vertically swinging catcher and means for retaining said catcher in the receiving position,
15 of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position, and a
20 spring-actuated latch for locking the engaging lever in the receiving position.

11. In a device of the character described the combination with a horizontally and vertically swinging catcher and means for retaining said catcher in the receiving position,
25 of a gripping-lever and an engaging lever pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position, a
30 latch for locking the engaging lever in the receiving position, a lever engaging said latch and carrying a roller, a spring acting to retain the latch in the engaging position and a cam
35 which is engaged by the roller to actuate the latch and release the engaging lever.

12. In a device of the character described the combination with a horizontally and vertically swinging catcher, and means for retaining said catcher in the horizontal position
40 and in the receiving position, of gripping and engaging levers pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving
45 position, a latch for locking the engaging lever in the receiving position, a spring-controlled lever engaging the latch and carrying a roller, means for releasing the catcher from
50 its horizontal position as it is swung inward and a cam engaged by the roller which actuates the latch and releases the engaging lever permitting it to drop to the releasing position and release a mail-bag.

13. In a device of the character described the combination with a horizontally and vertically swinging catcher, a latch 61 for locking the catcher in the horizontal position,
55 and a latch 58 for locking the catcher in the receiving position, of gripping and engaging levers pivoted to the catcher, means for retaining the gripping-lever in the receiving and gripping positions, a chain connecting said levers which is taut in the receiving position and which draws the engaging lever
60 to the receiving position when the gripping-lever is moved to said position, a latch 35 for locking the engaging lever in the receiving position, a lever engaging said latch and carrying a roller, a cam engaged by latch 61 for releasing the catcher from its horizontal position as it is swung inward and a cam engaged by the roller for actuating latch 35 and releasing the engaging lever.

14. A device of the character described comprising a horizontally and vertically swinging catcher, means for locking the catcher in the horizontal position and for locking it in the receiving position, means for releasing the catcher so that it will drop to
75 the vertical position, a spring for drawing the catcher inward and means for releasing a mail-bag.

15. In a device of the character described the combination with a horizontally and vertically swinging catcher having arc slots 47
85 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever having bosses upon one side, fulcrum-studs extending through said bosses, a pin carried by the gripping-lever and engaging the arc slots, springs connected to said pin and to the catcher back of the pivotal point of said lever, for the purpose set forth, means for locking the engaging lever
90 in the receiving position, and a chain connecting said levers, substantially as shown for the purpose specified.

16. In a device of the character described the combination with a horizontally and vertically swinging catcher having arc slots 47
100 and means for retaining the catcher in the receiving position, of a gripping-lever and an engaging lever pivoted to the catcher, a pin at the inner end of the gripping-lever which engages the arc slots, an adjustable plate upon the catcher back of the pivotal point of said lever, a U-shaped hanger pivoted to said plate, springs connected to said pin and to the hanger, for the purpose set forth, means
105 for locking the engaging lever in the receiving position, and a chain connecting said levers.

17. In a device of the character described the combination with a horizontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, means for retaining said levers in the receiving position and means for locking the catcher in the receiving position, of means for releasing the
115 catcher and permitting it to drop to the horizontal position as it is swung inward and means for releasing a mail-bag that has been gripped.

18. In a device of the character described the combination with a horizontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, means for retaining the gripping-lever in the receiving position, and a latch 35 for locking the engaging
120 lever in the receiving position, a lever engaging said latch and carrying a roller, a cam engaged by latch 35 for releasing the catcher from its horizontal position as it is swung inward and a cam engaged by the roller for actuating latch 35 and releasing the engaging lever.

19. In a device of the character described the combination with a horizontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, means for retaining the gripping-lever in the receiving position, and a latch 35 for locking the engaging
125 lever in the receiving position, a lever engaging said latch and carrying a roller, a cam engaged by latch 35 for releasing the catcher from its horizontal position as it is swung inward and a cam engaged by the roller for actuating latch 35 and releasing the engaging lever.

lever in the receiving position, of means for locking the catcher in the receiving position, a latch 61 for locking the catcher in the horizontal position, a cam 41 engaging said latch as the catcher is swung inward, to release the catcher and permit it to swing to the vertical position, and a cam 42 engaging latch 35 to release the engaging lever, substantially as described, for the purpose specified.

19. In a device of the character described the combination with a horizontally and vertically swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, means for retaining the gripping-lever in the receiving position, a latch 35 for locking the engaging lever in the receiving position, a latch 61 for locking the catcher in the horizontal position, and means for locking the catcher in the receiving position, of a cam 41, engaging latch 61 as the catcher is swung inward, and a cam 42 engaging latch 35, substantially as described for the purpose specified.

20. In a device of the character described the combination with a vertically and horizontally swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, means for retaining said levers in the receiving position, and means for locking the catcher in the receiving position, from which it is released by engagement with a mail-bag, of a cam 41 acting as the catcher is swung inward to release it and permit it to swing to the vertical position and a cam 42 acting to release a mail-bag that has been gripped.

21. In a device of the character described the combination with a vertically and horizontally swinging catcher, and engaging and gripping levers pivoted thereto, of a chain connecting said levers, means for locking the engaging lever in the receiving position, means for retaining the gripping-lever in the receiving position and retaining the chain taut, and means for locking the catcher in the receiving position, the engagement of a mail-

bag with the chain acting to draw the gripping-lever to the gripping position and grip a mail-bag between itself and the engaging lever, and the shock acting to release the catcher which may then be drawn inward.

22. In a device of the character described the combination with a vertically and horizontally swinging catcher, engaging and gripping levers pivoted thereto, a chain connecting said levers, a latch 35 for locking the engaging lever in the receiving position, means for retaining the gripping-lever in the receiving position and retaining the chain taut, a latch 61 for locking the catcher in the horizontal position, and means for locking the catcher in the receiving position, the engagement of a mail-bag with the chain acting to draw the gripping-lever to the gripping position and grip a mail-bag between itself and the engaging lever and the shock acting to release the catcher which may then be drawn inward, of a cam engaging latch 61 as the catcher swings inward to release it and permit it to drop to the vertical position, and a cam engaging latch 35 to release the engaging lever and a mail-bag that has been gripped.

23. In a device of the character described the combination with a vertically and horizontally swinging catcher provided with means for gripping a mail-bag, and means for locking the catcher in the receiving position from which it is released by engagement with a mail-bag, of a latch 61 for locking the catcher in the horizontal position, a cam which is engaged by said latch as the catcher is swung inward to release the catcher and permit it to drop to the vertical position, and means for automatically releasing a mail-bag that has been gripped.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. NICHOLS.

Witnesses:

A. M. WOOSTER,
S. W. ATHERTON.